

INFRARED DETECTOR WITH AMORPHOUS SILICON  
DETECTOR ELEMENTS, AND A METHOD OF MAKING IT

ABSTRACT OF THE DISCLOSURE

An infrared detector (10) includes a substrate (16) having thereon an array of detector elements (21, 139). Each detector element has a membrane (41, 81, 91, 111, 141), which includes an amorphous silicon layer (51, 142) in contact with at least two electrodes (53, 56-57, 92, 112-113, 143-145) that are made of a titanium/aluminum alloy which absorbs infrared radiation. In order to obtain a desired temperature coefficient of resistance (TCR), the amorphous silicon layer may optionally be doped. The effective resistance between the electrodes is set to a desired value by appropriate configuration of the electrodes and the amorphous silicon layer. The membrane includes two outer layers (61-62, 146-147) made of an insulating material. Openings (149) may optionally be provided through the membrane.